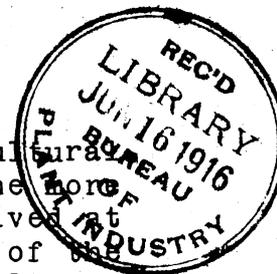


PLANT IMMIGRANTS



Descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the most important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the Inventory of Plants Imported.

No. 116

DECEMBER 1915

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Plates:

Jujubes, *Zizyphus jujuba*, natural size.
Schizandra chinensis?, natural size, S.P.I. No. 40025.
 A tropical grape, *Vitis tiliifolia*, natural size.

Applications for material listed in these multigraphed sheets may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual List of New Plant Introductions.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

Permission to publish on application only.

Baryxylum inerme (Roxb.) Pierre. (Caesalpiaceae.) 41574. Seeds from Little River, Florida. Presented by Mr. Charles T. Simpson. "A large, quick-growing, symmetrical tree, with a spreading top and fine graceful feathery foliage, indigenous to Ceylon and Malaya. The young leaves and shoots are covered with a brown velvety tomentum, from which the tree takes its specific name. The tree flowers twice a year at irregular seasons, some specimens being in blossom while others by its side are in ripe fruit. The flowers are rusty-yellow, sweet-scented, and borne in large erect panicles. Trimen, in his Flora of Ceylon, stated: 'It is a magnificent sight when in full blossom.' It is specially suited to dry districts, but also thrives to perfection in the moist region up to 1800 feet." (Macmillan, Handbook of Tropical Gardening and Planting, 2nd Edition, p. 299.)

Canavali obtusifolium (Lam.) DC. (Fabaceae.) 41619. Seeds from Burringbar, New South Wales, Australia. Presented by Mr. B. Harrison. "A native bean growing on the beach or sea coast here with pink flowers, the vines of which grow to the length of 20 or 30 feet. It is regarded as a poisonous plant by some writers, although it is said to be good poultry food." (Harrison.)

Chayota edulis Jacq. (Cucurbitaceae.) 41573, 41625-41626. Chayotes from Camaguey, Cuba. Presented by Mr. Robert L. Luáces, Director Granja Escuela. No. 41573. "Four chayotes of the green variety. Of these four, one has been sprouted off the vine and the others on the vine. We here in Cuba either sprout the fruits on the vine or over water, that is taking the chayote from the vine and putting it in the mouth of a wide mouthed bottle until it sends out the sprout. It is also common to cut off the lower end of the fruit before planting and allowing the wound to heal over either simply in the air or covering the wound with ashes. I send one chayote sprouted off the vine and in the air so that you may see how it changes somewhat in shape. Keep one of the fruits this way so that you may see just how much it will shrink, in sending out the bud, before drying up, for I believe that some of the varieties shown in the Porto Rico bulletin (Bulletin No. 28, Division of Botany) can be accounted for in this way." (Luáces.) No. 41625 is white and No. 41626 a long green variety.

Chayota edulis Jacq. (Cucurbitaceae.) 41621, 41627-41628. Chayotes from Orotina and San Jose, Costa Rica. Presented by Dr. Carlos Wercklé, Department of Agriculture. The fruits of these three varieties are light green, round white, and spiny, and round green, and spiny, respectively.

Chrysophyllum sp. (Sapotaceae.) 41648. Seeds from forests of Rio Contas, Bahia, Brazil. Presented by Mr. H. M. Curran. "Sapotaceous fruit wild in forest. Trees not seen. Has a thin, tough skin and soft light yellow flesh with a texture much like that of a ripe persimmon. The flavor of the fruit is slightly acid and very agreeable. One of the best forest fruits I have ever eaten." (Curran.)

Crotalaria cunninghamii R. Brown. (Fabaceae.) 41571. Seeds from Wellington Point, near Brisbane, Queensland, Australia. Presented by Mr. James Pink. "I am of the opinion that under cultivation it will prove an acquisition for ornamental planting and in dry situations it may prove a rival to the herbaceous *Calceolaria*. The plant grows about two feet high and will bear topping to any extent, every lateral throwing up a spike of flowers of bright orange yellow." (Pink.) "Though unattractive as to the colour of the flowers, this is a very curious and striking greenhouse plant, the soft velvety pubescence that clothes all the surfaces with a uniform glaucous hue at once arresting the attention. It is a native of the dry, almost desert regions of North-western and Central Australia, growing on sandy ridges, from Shark's Bay to the Gulf of Carpentaria, and penetrating southwards through Central Australia towards Spencer's Gulf. A shrub two to three feet high, everywhere covered with a soft grey-green tomentum." (Curtis's Botanical Magazine, pl. 5770.)

Eleocharis tuberosa (Roxb.) Schultes. (?) (Cyperaceae.) 41680. Bulbs or corms of *apulid* from Manila, Philippine Islands. Presented by Mr. H. T. Edwards, Director, Bureau of Agriculture. Of a somewhat similar form or perhaps species, Mr. F. N. Meyer says "They are mostly eaten raw, but are also sliced and shredded in soups and in meat and fish dishes. Foreigners in China grate them and serve them boiled as a winter vegetable, in which state they resemble sweet corn very much in looks and taste. The plants need a hot summer to mature and are grown on a muck or clayey soil with several inches of standing water on top, very much in the same manner as wet land rice."

Garcinia sp. (Clusiaceae.) 41622. Seeds from Brazil. Presented by Mr. H. M. Curran. "Species cultivated in Rio de Janeiro Botanical Gardens. Trees 30 to 40 feet high, 16 to 18 inches in diameter, with heavy crop of large fruit, approximately 2 inches in diameter, with yellow acid flesh. Probably a common variety from India." (Curran.)

Koelreuteria formosana Hayata. (Sapindaceae.) 41679. Seeds from Taihoku, Formosa. Presented by Mr. Genjiro Takata, Chief, Bureau of Productive Industry. An indigenous Formosan tree related to *K. bipinnata* Franch., but dif-

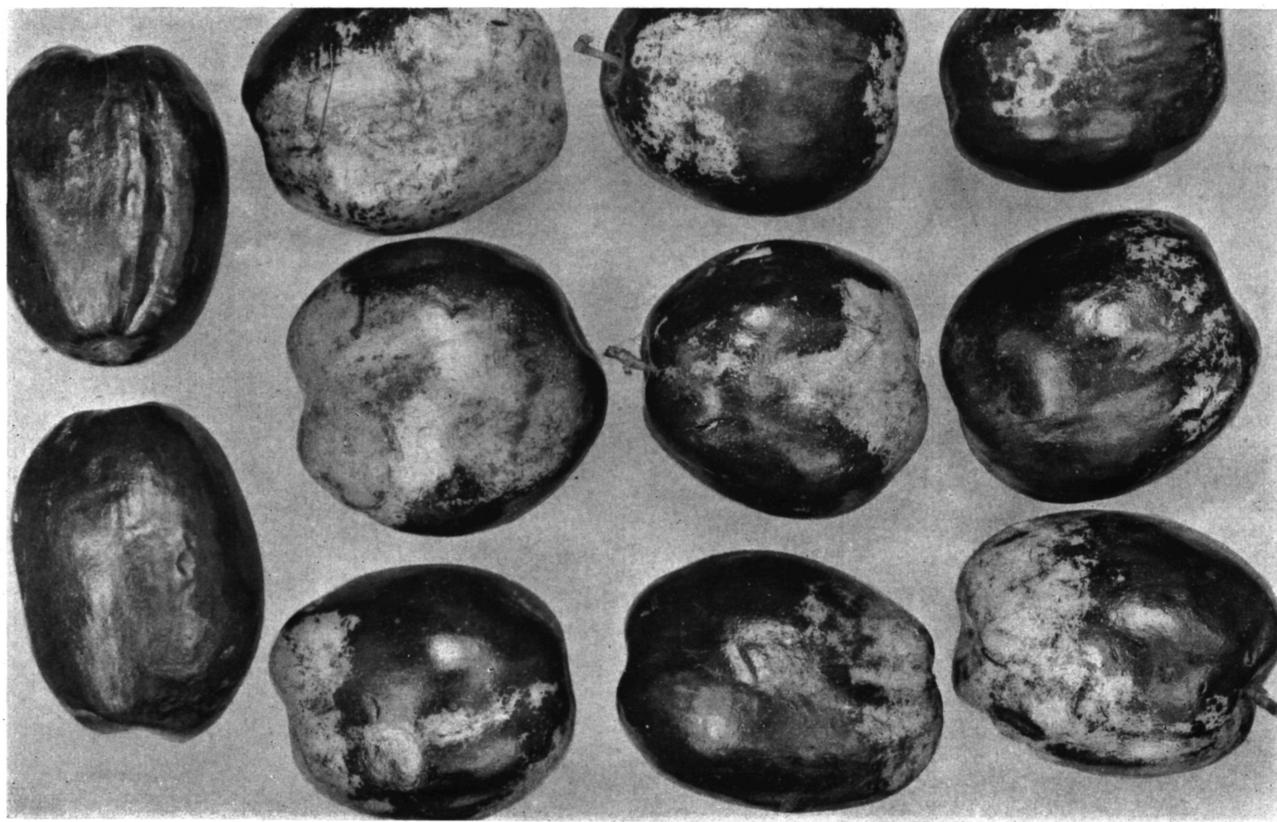
fering from that species in having subentire leaflets. A small, handsome tree with bipinnate leaves, and terminal spreading clusters of yellow flowers.

Lilium sp. (Liliaceae.) 41585. Seeds from Bhutan, India. Collected by Mr. R. E. Cooper and presented by Bees Limited, Liverpool, England, at the request of Mr. A. K. Bulley. "Grows on turf in rock ledges at an elevation of 13,000 feet. Flowers reddish green hanging bell-like on 6-inch stem." (Cooper.)

Malus sargentii Rehder. (Malaceae.) 41572. Seeds from Tokyo, Japan. Presented by Dr. T. Watase, Tokyo Plant, Seed and Implement Company. "A shrub of bushy habit 3 to 5 feet high; young shoots downy. Leaves ovate or oval, 2 to 3 inches long, 1 to 2 inches wide; pointed at the apex, rounded or slightly heart-shaped at the base, often three-lobed, sharply toothed; wooly when quite young, becoming nearly smooth before falling; stalks downy, 1/3 to 1 inch long. Flowers pure white, 1 inch across, produced in clusters of five or six, each on a stalk 1 to 1-1/4 inches long; calyx smooth outside, wooly within. Fruit orange shaped, 1/2 inch wide, bright red, the apex marked by the scar of the fallen calyx. I only know this species by a small specimen sent to Kew by Professor Sargent in 1908, but it appears to be a pretty plant, and distinct among crabs by its purely bushy habit. It was originally discovered by Sargent in 1892 near a brackish marsh, Mororan, Japan, and was named in his honor by Mr. Rehder in 1903. The author observes that it is most nearly related to *P. toringo*, but differs in its larger, pure white flowers with broad overlapping petals and in its larger fruits. From another ally, *P. zumi*, it is distinguished by its broader, often lobed leaves, the shape of the (broader based) petals, the glabrous calyx-tube and the habit." (W. J. Bean, Trees and Shrubs Hardy in the British Isles, Vol. 2, p. 293.)

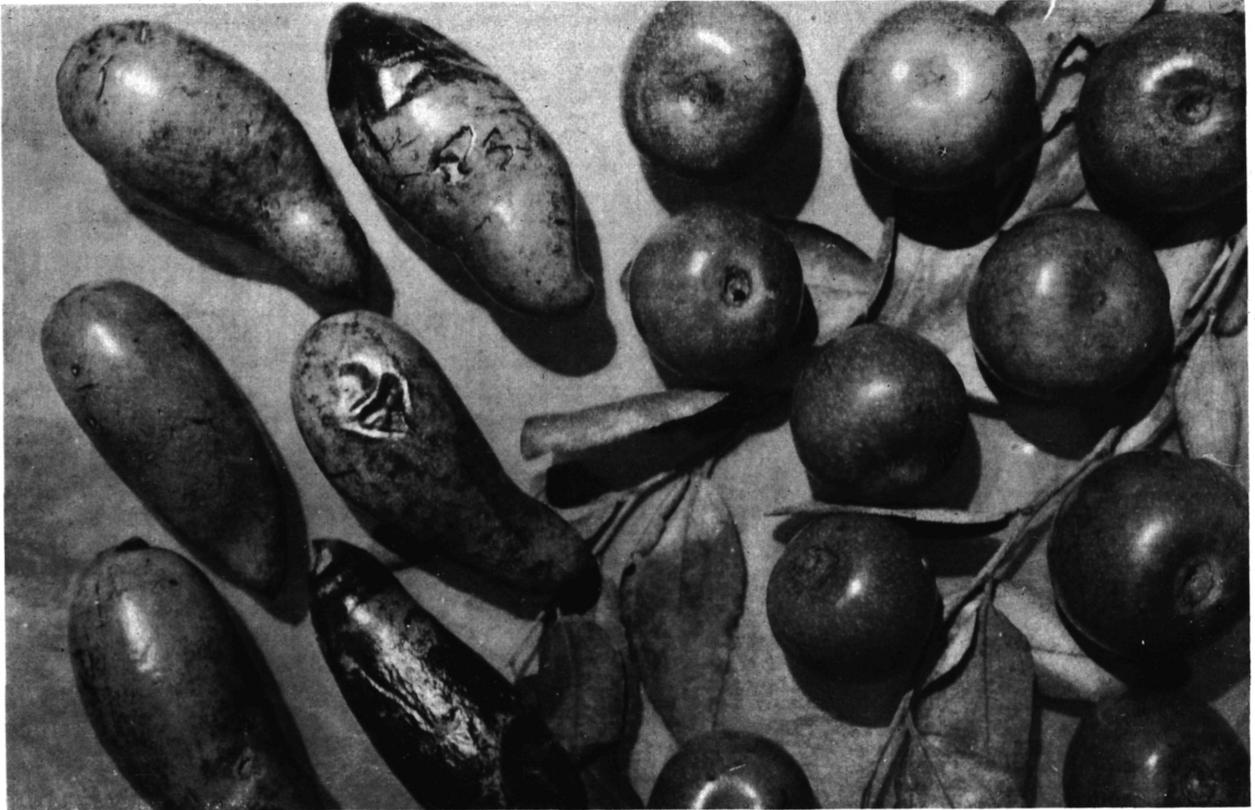
Meconopsis horridula Hook. f. & Thom. (Papaveraceae.) 41582. Seeds from Bhutan, India. Collected by Mr. R. E. Cooper of Mr. A. K. Bulley. "A many stemmed plant 6 inches high, at an elevation of 14,000 feet on peaty turf over scree. Flowers blue, large; plant prickly." (Cooper.) The genus *Meconopsis* is made up of poppy-like annuals and perennials with blue, yellow or purple flowers. They may succeed in the mountain regions of the west.

Meconopsis lyrata (Cumm. & Prain) Fedde. (Papaveraceae.) 41592. Seeds from Bhutan, India. Collected by Mr. R. E. Cooper and presented by Bees Limited, Liverpool, England, at the request of Mr. A. K. Bulley. "A yellow flowered herb three feet high at base of rock cliffs in soil similar



Jujube. *Zizyphus jujuba*. Natural size.

An attractive looking large variety of jujube, of light mahogany-brown color, sold on the streets of Sianfu under the name *Tsui tsao*, which means "fragile jujube." This variety is eaten only when fresh; it is said not to be suited for drying or candying. Of medium sweet taste. Photographed in Sianfu, Shensi, China, August 30, 1914, by Frank N. Meyer. Photograph No. 13120.



Jujubes. *Zizyphus jujuba*. Natural size.

Two extreme forms of jujubes. To the left a very elongated one of yellowish-brown color, called "chi hsim tsao," meaning "chicken's heart jujube." On the right a round, compressed variety of dark mahogany-brown color, called "Tien tsao," meaning "sweet jujube." Photographed in Sianfu, Shensi, China, August 30, 1914, by Frank N. Meyer. Photograph No. 13123.

to that of *Abies* forest at an elevation of 11,000 feet." (Cooper.)

Persea americana Miller. (Lauraceae.) 41578-41580, 41629. Seeds of four varieties of avocado from Guatemala City, Guatemala. Presented by Mr. William Owen, American Vice-Consul in Charge. No. 41629. "Seeds from a very large aguacate, which I consider the finest product of Guatemala in that line. They are high grown, which will enable the tree to better thrive in a northern climate. Aguacate trees are not numerous in immediate neighborhood of this city. I am compelled to depend almost entirely upon the goodness of distant friends." (Owen.)

Prunus microlepis smithii Koehne. (Amygdalaceae.) 41566. One cherry tree from Colchester, England. Procured from Messrs. R. Wallace & Company. "Under the erroneous name of *P. miqueliana* this cherry has been cultivated in this country for some three or four years, and has created a good deal of interest because of its flowering from November onwards. Owing probably to the excessive mildness of the late autumn of 1913, it made a very charming display at that time. When it was in flower it was sent to Professor Koehne at Berlin, the leading European authority on this genus, and he pronounced it to be a many-petalled form of his *P. microlepis*, originally described in *Plantae Wilsonianae*, I, p. 256 (1912). Normally, this cherry has five petals to each flower; for this form, which has 10 to 15, Professor Koehne suggests the varietal name *Smithii*, to associate with the plant the name of Mr. T. Smith, of Newry, who introduced it from Japan. It is a deciduous small tree with ovate-lanceolate, acuminate leaves, sharply serrate (the teeth gland-tipped), 1- $\frac{1}{2}$ to 3- $\frac{1}{2}$ inches long, hairy on both surfaces. Flowers, pale pink, 1 inch wide; the petals obovate, often notched at the apex. Stamens white with yellow anthers; style glabrous. Calyx, glossy green, glabrous, tubular at the base, with five reflexed, ovate lobes $\frac{1}{8}$ inch long, toothed, pointed." (Kew Bulletin.)

Prunus sp. (Amygdalaceae.) 41577. Cuttings from Kyoto, Japan. Presented by Miss E. R. Scidmore, Yokohama, Japan. "*Yama Zakura* (mountain cheery), the Giou cherry tree in Maru yama Park (Sea mountain park), Kyoto. It is a drooping variety and these cuttings must be grafted on a drooping variety to get good results." (Scidmore.)

Sicana odorifera (Vell.) Naud. (Cucurbitaceae.) 41665. Seeds of a melocoton from Brazil. Presented by Mr. H. M. Curran. "Common half-wild yellow-fleshed melon of negro clearings, mountains Rio Contas, 12 to 14 inches long, 3 to five inches in diameter. Exterior reddish. Flesh tough and not very palatable. A strong grower which climbs on trees in clearings." (Curran.)

Tamarix dioica Roxburgh. (Tamaricaceae.) 41624. Seeds of a tamarisk from Saharanpur, India. Presented by Mr. A. C. Hartless, Superintendent, Government Botanic Gardens. "A small tree. Branches with drooping extremities; ultimate branchlets elongate, patent-fastigiate. India and Burma." (Hooker, Flora of British India, Vol. 1, p. 249.)

Theobroma cacao L. (Sterculiaceae.) 41666-41670. Seeds of cacaos from Brazil. Presented by Col. Manoel Couros through Mr. H. M. Curran. Nos. 41666-41667. "Var. *Para*. These seeds are from the largest and most perfect fruits found in a young vigorous plantation on new soil, mountains of Rio Contas. They represent the best type of cacao grown in this region. Rio Contas basin is one of the big cacao regions and produces fine quality cacao beans." No. 41668. "Egg shell variety. A small form of fruit with thinner shell and few seeds. Occurs in all plantations but not selected for planting as the yield is less. From a young vigorous plantation on new soil, mountains of Rio Contas." Nos. 41669-41670. "Var. *Para*. Cacao called *Maranhao*. Probably the same as S.P.I. Nos. 41666 & 41667, though preferred by certain planters. Large perfect fruits selected by Col. Manoel Couros from trees on his plantation were the source of these seeds." (Curran.)

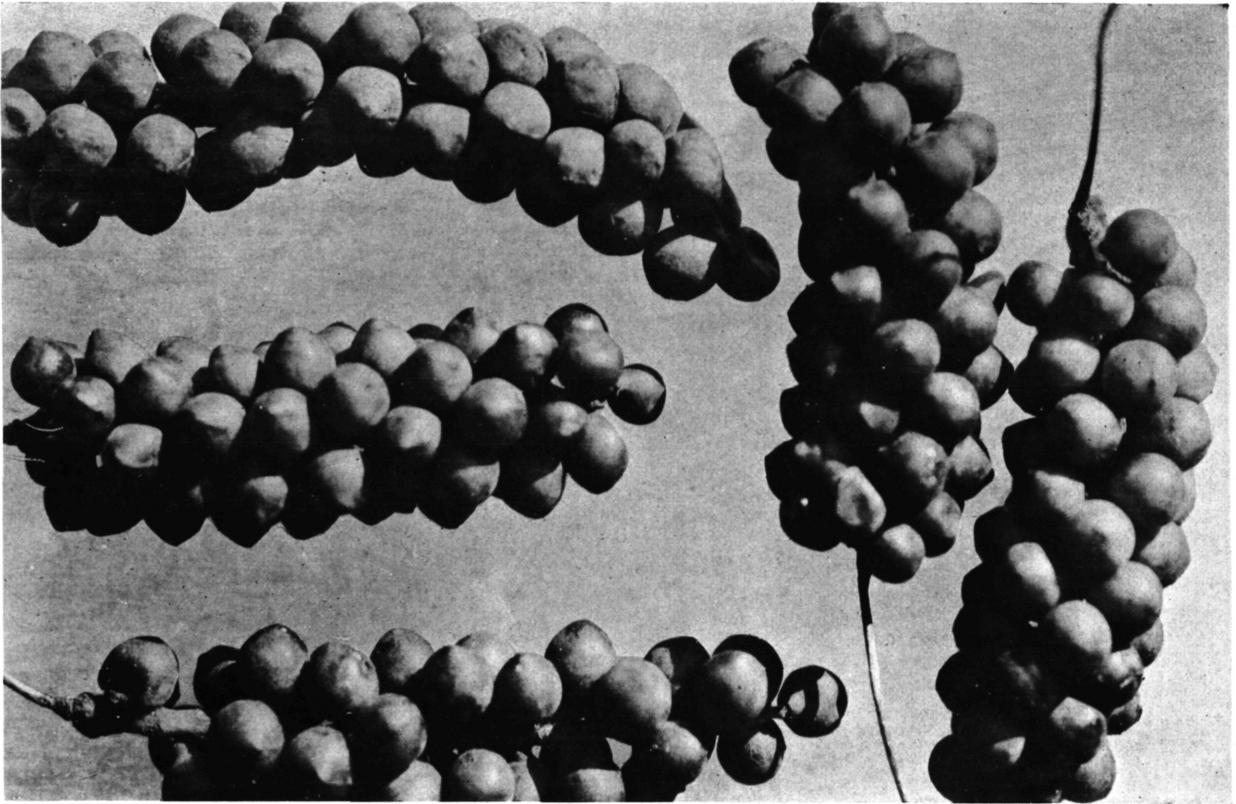
Wasabia pungens Matsumura. (Brassicaceae.) 41567. Roots from New York City. Presented by Mr. H. Terao. "Before cooking the graded wasabi is usually beaten on a dresser with the back of a knife so that the root-cells may be mostly broken up, as you have perhaps learned in Japan. It is said that there is no wasabi for sale in New York City yet. Two Japanese restaurants here get 50 roots a year from San Francisco, where the wasabi comes from Japan." (Terao.)

NOTES FROM CORRESPONDENTS ABROAD.

Mr. F. J. Wiens China M. B. Mission, writes from Shonghong via Swatow, March 7, 1916:

"I recall my promise from last summer to send to you some of the native water chestnuts which seem to be quite an article of export here.

"I now take pleasure in sending under separate cover some samples and trust that it will not be so cold any more in the states through which they have to go that they will freeze. The natives plant them here in June, (but it will have to be earlier where it is not so warm. This is more a fruit for warm climate) and then they are not put right into the ground but they take sand and plant them in wet sand so that the point sticks out of the sand and then they



Schizandra chinensis?, Natural size, S. P. I. No. 40025.

"Clusters of ripe fruits, growing on a slender, woody vine found between tall scrub on shady places. The carmine-red berries are of the size of currants and possess a sub-acid, spicy, aromatic taste but the last somewhat too pronounced to make it readily acceptable to the majority of people. The Chinese are very fond of it and claim it has medicinal virtues, being a blood-purifier. The plant deserves to be experimented with as an ornamental cover-vine on shady places. Chinese name "Wu wei tzu;" meaning "fruit of five tastes." Photograph taken at Paoki, Shensi, China, Sept. 12, 1914, by Frank N. Meyer.



A tropical Grape, *Vitis tiliacifolia*.

A good grape suited to strictly tropical conditions is not yet in cultivation. In this Cuban species we may have a fruit which through selection or hybridisation can be developed into a splendid table fruit. In its present wild form, as here shown, it is a fruit of sufficient horticultural value to merit attention. The berries are deep purple, and of rather acid flavor, suitable for jelly making, but scarcely for dessert. Two strains occur in Cuba, one with large, loose clusters, here shown, and another with smaller, very compact clusters of berries. Photograph natural size, by Wilson Popenoe, Herradura, Cuba, July 19, 1914 (P16053FS.)

sprout in constantly wet sand and after about three or four weeks they are taken out and planted into the water fields like the rice. They want good manured fields and always covered with water then they spread like potatoes in the ground and in the fall they are dug up after the water is drained off.

I also send you some seeds of a kind of a turnip the English name however I could not learn till now. The edible part is the root and it has a sweet and delicious taste. The seeds are planted or sown in April or May and the flowers when they come are all cut down except those wanted for seeds and in fall also dug up. Now I do not know whether you will not have this latter kind already but if so just throw the seeds away and be done with it. The natives tell me the seeds are very poisonous."

NOTES ON BEHAVIOR OF PREVIOUS INTRODUCTIONS.

Carissa grandiflora. This handsome shrub, which is considered one of the best hedge plants in Natal, South Africa, is rapidly becoming very popular in South Florida, not only because of its spiny character which makes it an impenetrable hedge, easy to grow, but because of its large white fragrant flowers and brilliant red edible fruit. Mr. Bisset, when at Mr. C. P. Taft's place at Orange, Cal., wrote as follows:

"Mr. Taft has a *Carissa grandiflora* that is bearing a fine crop of beautiful, large-sized fruits. This is the first time I have seen the *Carissa* bearing a good crop of fruit in California. This bush was frozen back when the temperature was 27 degrees last year."

For photographs see Label Catalogue for 1915-1916.

Litchi chinensis (21204). Excerpts from Mr. Bisset's notes on a visit to Tampa, Fla., August 14th.

"On August 17th I visited Mr. W. S. Taylor's place to see the Litchi trees. I found them in excellent condition. The tallest one is 31 inches in height by 50 inches in spread. The trees are planted in a hollow where they get all the rain-fall and the drainage into the basin from the land close by. They are protected by buildings and tree growths. If the frost does not injure them or if Mr. Taylor protects these trees from it, he may succeed in fruiting this Litchi in the vicinity of Tampa.

"After looking over Mr. Taylor's Litchi trees, I went to see Dr. Richardson's place on Bay Shore Boulevard, where another plant of Litchi was growing. This plant is 5 feet 6 inches in height, with straight stem, unlike Mr. Taylor's

plants, which were rather spreading and low, being wider than high. The plant looked well; the leaves were large and healthy, of good color, and seemed to be in excellent health."

For photographs of Litchi see Label Catalogue for 1915-1916 and Plant Immigrants Nos. 111 & 112.

Lonicera maackii (391.) A honeysuckle brought from Russia by Hansen in 1898. A cutting from original plants of this number, planted by Mr. Bisset in 1912, bloomed the following year and has bloomed each succeeding year, and now forms a beautiful, rapid-growing shrub with spreading branches and deep green leaves on the axils of which are borne the clusters of trumpet-shaped flowers which are white on first opening but rapidly turn yellow. This is certainly a precocious flowering species.

For photographs see Plant Immigrants No. 74 and the Label Catalogue for 1915-1916.

Rheum rhaponticum (20420.) A species of rhubarb introduced by Mr. Meyer from the Agricultural Station of Khabarovsk, Siberia, in 1907. We have just received an interesting letter from Mr. A. Merritt, Hollis, L. I., regarding this number, a portion of which is quoted below:

"A little over three years ago I asked for and had sent to me a root of Siberian rhubarb.. This turned out to be a most delicious plant of a taste much more delicate than any other rhubarb I have ever eaten or been able to secure. Another unusual feature of it was that it is almost 'sweet' enough to eat without the addition of sugar. We use only about one-sixth as much sugar to sweeten it as the ordinary rhubarb calls for under the same circumstances.

"The plant does not seem to spread, however, as does the ordinary rhubarb, and I have been afraid to make any experiments for fear of losing the one plant that I have and I am wondering whether you could tell me how to propagate from this plant and whether you could send me another root of this same rhubarb."

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